

WORK ALONE. Acknowledge all resources, including discussions, texts, urls, etc. Non-detailed discussion with a non-group member is allowed, but must be summarized and acknowledged by all involved. Viewing or exchanging written work, even in rough or preliminary form, is not allowed.

Your project can be on anything relevant to solving and/or playing games. Talk to me as soon as you have picked your project. Below are possible project ideas, you can also pick your own.

2019 project ideas

- reasoning about connection contracts in a solver, e.g. learn which contracts are likely to be used, solve under those constraints, then if necessary solve without the constraints: is this faster?
- our hex gui needs a score history visualizer, plotting est. score after each move so far. our searches also need visualizers, it would be good to see scores at various depths of the pvs during search
- automatic game analyzer: generate post-match game report: blunders? weak moves?

2016 project ideas

- mohex: add progressive bias from solver
- mohex: recognize ladder patterns, and do local explorations
- hex: shortest win
- hex: connectivity and winning-move in playouts
- pedagogy: much of this material has been written for an informed specialist audience, but there is little that is precise and suitable for a general audience
- analysis: there are many open problems on analysis of mcts, pns, etc.
- write player/solver for your favorite game
- solve DarkHex exactly on small boards
- write a program which computes shortest win values for Hex (or some other game), ie. it solves positions, but also gives the minimum number of moves needed to win
- experiment with sibling conspiracy number search
- add machine learning to dfpns (or focussed dfpns), test on some game
- write a generic Y solver or player
- tidy the Rex solver: ladders?
- solve 7×7 Rex (strengthen Rex solver)

- solve 11×11 Hex
- graph theoretic Hex/Rex heuristic
- Rex player (add to MoHex?)
- inferior cell analysis for Hex (there are still open problems) or some other game (Havannah, Y, etc)
- puzzle generator for some game (find positions with unique winning moves)